Vol. 5 No. 1 Jan. 1988

Layton Atari Computer Enthusiasts

LACE

400 800 600XL 800XL 1200XL 65XE 130XE 520ST 1040ST MEGA ST

A winning combination for years to come

IMAGE

LACE, The monthly publication for the Atari Computer owner. Designed to assist the Atari user in the use and enjoyment of their ATARI computer and accessories.

All articles may be sent to the editor mail to:
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Presidents Palace

At Home with David S. Young

...LAST REPORT...

Well, It's been fun. As I look back at the last year I see alot of fun times. The ATARI FEST was a larger success than I origanally thought. In fact the FEST was quite large in and of itself. I was surprised at the number of vendors of software and hardware that showed their stuff.

The merger of H.U.G., I.M.A.C.E., and L.A.C.E. will be a step forward for the ATARI community. This merger may take a few meetings to full feel it's effect. So if things don't look good right off be patient, some things take a little time.

For all you 8-bit users don't feel left out because of all the things the ST's are doing. The XE game system sold very well this Christmas season. That means that software will probably still be produced for the 8-bits. It also may mean some far out games with the bank select cartridge system.

Speaking of software.

I finally got to talk with Analog Magazine. I was told that they had a BIG problem with the company that was publishing the Magazine for them. If you subscribe to the magazine you will be getting a letter explaining the problem and that your subscription will be extended to cover all issues you have not received. In the mean time just be patient the next issue will be March 1988.

The next meeting will be the final election for officers. We will first entertain any additional nominations then we will hear from the candidates. Then we will hold the vote. We want every member to vote. Thats about it. It really has been fun.

.....BYE.....

Thanks David for taking the club through its most dificult time and coming out better than ever.

Whiz

Veep RamBLings

By Shawn Hart

Well, another year has come and gone. I had planned to recap the last year in this month's column, but then I figured "who cares", after all its over now.

Instead I think I'll talk about the coming year. Fist off, I expect that we shall see a dramatic increase in our member-ship this year with the combining of LACE with IMACE, and the absorption of the Hill Users Group. In addition to this is the possibly large number of people who found a Atari under their Christmas tree this year. I personally know four new ST owners as of December 25th. Of course the ST isn't the only new computer on the block. If what I read in the papers is true, Atari sold out the total warehouse stock of the "XEGS" (the XE Game System). For those of you who haven't seen one yet, the XEGS is the 65XE in a new package, and even though it is sold as a game machine, it comes with a keyboard, and has a serial disk port just like the older 8 bit computers always have. So I suspect that once the new crop of gamers get a little board with 'Bug Hunt' we'll see a new generation of 8 bitters in the club investigating just what their machine can' really do. In the mean time, if you haven't convinced yourself to go ST yet, I think that the broad sales of the XEGS will revitalize the 8 bit market.

So what is in the future for LACE in 1988?. I hope to see some new SIGS get started. In particular I'm going to start pushing for a C sig. I'd like to see it cross the word boundary (8 to 16 bits), and have some programming goal as its source of direction. I'd also like to see a Basic sig get started again, once again with both 8 bit and ST participants, preferably in Turbo Basic and GFA basic. And if there is any interest in hardware projects how about an interface for a detached keyboard for the ST (through the MIDI port?) and a 3.5 inch disk interface for the 8 bit.

What about a computer fair this year? Last year we (with the other six Atari user groups in the Salt Lake Valley) sponsored the Atari Fest. It appears that this year will not see any support from Atari Corp for an encore. I, for one, would like to see us sponsor a similar computer fair this year. It doesn't have to be in Salt Lake, we could make it an Ogden local affair (maybe at Weber State). I also don't think that we need to limit it to Atari only. Lets let the Apple, Commodore, and IBM groups participate (and see the folly of their ways). I think this is

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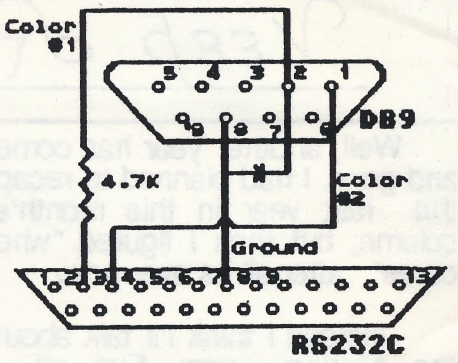
TECHNICAL HELP

And now a better way!!
by Mr. Goodprobe

It appears that for every good and needed idea mankind has come up with, someone has added some extra features and labor saving additions that make that device the "thing you can't live without!" Such an item is this little null modem that will allow you to transfer files from your St to your 8 bit Atari, and to other computers as well. Now I fully realize that Antic published and excellent article on this very topic a while ago, but their procedure forced the user to have in his possession an interface of some sort for his 8 bit Atari, whether it be a PR Connection, 850 or the like, nonetheless, you had to have this item in your possession or the transfer of data between both computers was impossible. But now I will in a few short paragraphs show you how to accomplish the very same feat without an interface.

What we will be assembling is a skimpy at best data transfer setup that is easy on the dewallet. First you will need:

1) A joystick cable such as used on your favorite alien blaster! This must be complete with the plug on one end.
2) A 25 pin connector to plug in the modem port in the rear of your ST.
3) One 3.9k to 4.7k 1/2 watt resistor 10% tolerance
4) A short run of 3 conductor wire
5) A diode (such as ECG 109 or any small switching signal diode).



As you can see, we are merely connecting the recieve data line to the transmit data line on the ST, while at the very same time connecting the transmit data line of the 8 bit Atari to the recieve data line of the ST. You will then need to use a term program on the 8 bit that addresses the joystick port, such critters are MPP term, and also the term which came with the Supra series of 1200 baud modems. You can go as fast as the 8 bit program allows, with a ceiling of 9600 baud if someone were to implement faster transfer routines in the aforementioned programs. I have been using this type of setup for several months now...and its a dream!!!

This same basic setup can be used to connect the 8 bit Atari to most any computer out there on the market today, with no difficulties whatsoever.

By the way, you might find it amazing that this entire article this week has been typed, edited, spell-checked and saved to disk..while downloading a 500K+ disk of Music Studio files!! "Sounds like multitasking to me"

you might comment, and guess what? You are right! I am using a new file protocol .TXF for Interlink called MultiXY, it allows you to download/upload in the background while running your favorite program and doing other more useful things! I started the transfer, and then went to my file menu on Interlink, pulled it down, and clicked on "Execute". I then chose my Word Writer program and loaded it from there, and thats were we are at this very moment! I am able to check the progress of my xmodem or ymodem file transfer by going up to the accessory area of my screen, and viewing the small display located there. It tells me how many blocks have been transfered, and with how many errors. If you show a file, and save to the disk, you get an error, but of course your BBS system will resend that block...Amazin what they are doing now eh? This accessory only works with Interlink 1.71 and up, so unfortunately owners of other programs cannot enjoy this great time saving feature...

Keep those Atari's humming!
Mr. Goodprobe

Please keep those project ideas coming, many interesting items shall appear in future issues due to the gracious response of our readers!
Good job!

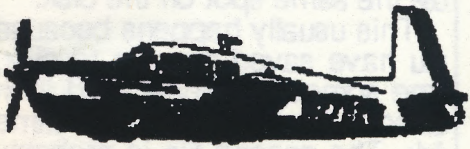
The END

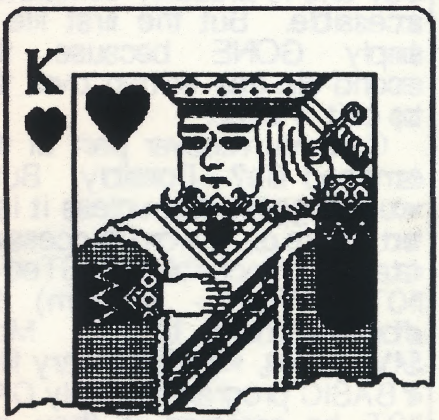
Veep, from page 3

an excellent way to attract new members, raise money, and disseminate a little information about our machines.

These are a few of the ideas that I have had about the new year. What do you think?.

Over and Out,
Shawn Hart,
Veep





Thanks Shaun for stepping in and helping L.A.C.E.
Whiz

There's HOPE after all

Utilities 15-Dec-87 03:04:41
Sbt: #201344-#mess.fix
Fm: Bill Wilkinson [OSS] 73177,2714
To: MR GOW 73167,3607

There is NO program that can GUARANTEE to fix a disk when you get an error 164.

An error 164 usually results when you have two files trying to use the same spot on the disk.

This usually happens because you have saved one file to disk, done something illegal, and then saved a second file to the same disk. The second file is probably okay and is probably completely accessible. But the first file is simply GONE because the second file has written over the top of it. Period.

Can you recover part of the damaged file? Possibly. But I would suggest that unless it is a text file (e.g., a word processing data file or possibly a LISTed -- NOT SAVEd -- program) the effort is bound to fail. Most SAVEd files, whether binary files or BASIC programs, simply CAN NOT be restored if they are missing pieces. Sorry.

Having said all that, what CAN you do with a damaged disk? Well, the DISKFIX utility that is part of DOS 2.5 will at least TRY to recover as much of a disk as it can. But if it decides a file is damaged beyond repair, it simply removes the file from the directory! So I would recommend making a sector copy of any damaged disk before attempting to use DOS 2.5's DISKFIX.COM program.

You can get DISKFIX here on CIS, in the DL's (DL 3, file DISKFI.*).

But I personally recommend that you send off to Atari for a copy of not only a disk with DOS 2.5 but also a really good manual. The manual alone is worth the $10 or so that Atari charges.

Finally: The Atari DOS manual suggests this program to recover as much as possible of a damaged file, so long as the file is not bigger than available RAM in your machine:

```
 10 PRINT "INSERT DAMAGED DISK THEN GIVE NAME OF FILE TO RECOVER ";
 20 F=FRE(0)-300 : DIM BUF$(F),FILE$(20)
 30 INPUT FILE$
 40 OPEN #1,4,0,FILE$
 50 TRAP 100
 60 FOR I=1 TO F : GET #1,B : BUF$(I)=CHR$(B)
 70 NEXT I
 80 PRINT "FILE TOO BIG"
 90 END
100 REM Get here on error...
110 TRAP
120 : CLOSE #1
125 PRINT "INSERT FORMATTED DISK THEN GIVE NAME TO SAVE FILE TO ";
130 INPUT FILE$
140 OPEN #2,8,0,FILE$
150 PRINT #2; BUF$ ;
```

You could be neat and add line 160:

```
160 END
```

Finally, line 150 might be safer done as:

```
150 FOR J=1 TO I-1 : PUT
```

#2,ASC(BUF$(J)) : NEXT J

OOPS...One more finally.
In one of my articles in COMPUTE in that last year, I discussed probable causes of messed up disks. I noted that I personally have virtually NEVER had a disk messed up by DOS. Reason: I never never never change disks unless the program tells me to do so. If I am changing disks while using BASIC, I always type "END" before doing so. In desparation, I will hit RESET before changing.

The single most common cause of disk crashes is inserting a new disk while a file (or files) is still OPEN for output on the first one. This can happen with word processing programs, data bases, etc., etc. ALWAYS WAIT for the program to tell you it is time to swap disks. ALWAYS use the menus to get to the "disk change" point. NEVER just yank a disk and plunk in a new one.

These are a FEW hints from that article.

Good luck.

SJ Translator NEWS

The following is a copy of a letter we received from David Small.

" Dear Customer,

We very much appreciate your order for a Translator, or a Translator as part of the Magic Sac Professional package. We're running late on shipping them, as you know, and rather than leave you wondering what's going on, we thought we'd tell you our current status.

We've always believed in telling our users about known bugs in our software, as you've seen. We don't see any reason to change that policy on bugs in our production process. It's always a little harder having your warts bared in public, but we think you appreciate our honesty.

First, the Translator is done, and has been for a long time. We've found a few minor bugs in it, all fixed, during the last couple of months, but they are minor stuff-- mis-spellings in diagnostic messages, stuff like that. I've got ten of them sitting in our lab and they work fine:these are ten I soldered by hand.

The hard part for us is getting the things made. It works in four stages. First, you get the circuit boards manufactured. Second, you obtain all the needed parts. Third, you get the parts soldered into the circuit board, and finally, you test, package, and ship the board.

The circuit boards are long since done. We obtained all the parts awhile ago. We had them soldered in...and none, zero, of the boards worked. Something

was terribly wrong.

After a week of so of testing, we found that we'd mis-supplied a key chip. It was supposed to be a part compatible to an AD558 digital to analog converter, and indeed part of the manufacturer's part number had an AD558 in it. What it turned out to be was some weird clock chip. Anytime it was powered on, it sent minus two volt spikes into the rest of the board, which damaged other chips, chiefly the micro-processor.

This was very hard to find because every one of the AD588 chips we had was bad, and every board they were plugged into became damaged. You just don't expect an entire run of chips to be bad: you usually swap chips one at a time to look for problems. And anytime we'd swap AD588's, it'd damage out another chip on the board.

Well, we finally got that solved. We had some real AD588's Fed-Exed in, removed all the bogus AD588 chips and replaced them with real ones. Then we tested a lot of boards and replaced the chips that had been burnt out; naturally, the most expensive chip on the board, the 64180 micro-processor, was the one most often damaged. (We are considering making 64180 key-rings and selling them; we've got a supply of dead chips you wouldn't believe.)

Testing continued.

Now our salespeople were unaware of the extent of our problems. They were told that we thought we could have them worked out by the time we were ready to start shipping. Sometimes, you work on a problem and don't know when it will end until you've finished it. This was one of the problems.

Anyway, by the time all this trouble with parts was done, we'd missed our production slot at our board assembly house; they had another big order they had to work on. They scheduled us in for the next slot. Then the production manager up there quit, and we had to train a new person in the special testing techniques we use to make sure the boards are solid.

Well, the upshot of all this is we're going to be about two weeks late. We've got good parts now in quantity, boards, firm production and shipping dates, and we will ship the week of Novemeber 16-20.

There's just no way we could speed up the process; we tried everything humanly possible to do it. When you're given bad parts, there's just nothing you can do.

I apologize to each and every one of you that ordered based on a Nov. 1 ship date, or earlier; while we can say "its not our fault", the truth is, it is our responsibility, and we accept that. If you are tired of waiting and want your money back, I can understand it. just let us know, and we will return it to you promptly and cheerfully.

It's been a hard number of weeks, with lots of late hours, trying to overcome these

problems, so you'll understand this is a difficult letter for me to write. I don't like being late on orders. I very much appreciate the faith you've put in us by ordering, and I want to return that faith by being honest with you and telling you where things stand. yes, we are going to be two weeks late; yes, we did everything we could to avoid it; yes, we take responsibility for it. We certainly take credit for bad parts, but it's up to us to do something about it.

Again, those of you that have placed deposits are first in line for the units as they come off production testing, in our agreed-upon first-ordered first-shipped. No dealer or distributor is getting Translators ahead of you, count on it. (Yes, we've received considerable pressure from distributors to do this, and we would not).

Our top priority at Data Pacific is getting these Translators out as soon as possible. We owe you, our customers, that for your patience. I'd like to tell you that if you have any problems getting the unit, or with the Translator itself, you can write or call me personally at Data Pacific, and I'll personally make sure we get it straightened out in a hurry. It's really the least I can do given the loyal support you have given me. Our address and phone number are on the first page of this letter.

Again, thank you for your support; our company wouldn't exist without you, and we're well aware of it. We believe we have the best customers around; time and time again they've proven it with bug reports, by letting us know how to improve the product, by telling us what we need to know to be a service-oriented company.

Thanks for taking the time to read this letter.

Sincerely, Dave Small Developer"

The reason I brought this to your attention is: this letter is a good lesson to anyone who is in business, or hopes to dive into this fascinating world of computer products. Data Pacific, despite all the problems they had, took the blame for what happened. That shows me that they have the character one looks for, and sadly rarely ever finds. When an unhappy customer calls your place of business, the last thing they want to hear is "It's not my fault!" Data Pacific took the blame for something they really had no control over, and that shows me that they truly are a company which is going to support their product well, answer any questions you might have, and do things in general the old fashioned way. This is all the more reason you should feel comfortable in purchasing the Magic Sac cartridge for your ST, and the Translator One, which allows your St to directly read Macintosh disks. There is no better feeling than knowing if you have questions, the company who made an item is more than willing to help you in your dilemma.

Good job Dave!

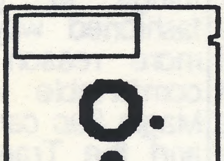
TECH SUPPORT NOTES HOOK UP ANOTHER DRIVE

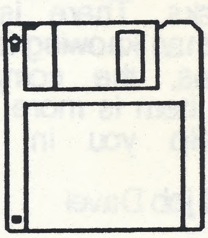
14 Pin Connector	Signal Name	43 Pin Connector
1	Read Data	30
2	Side 0 Select	32
3	Logic Ground	15
4	Index Pulse	8
5	Drive 0 Select	10
6	Drive 1 Delect	12
7	Logic Ground	17
8	Motor On	16
9	Direction In	18
10	Step	20
11	Write Data	22
12	Write Gate	24
13	Track 00	26
14	Write Protect	28

Many of you have asked how to hook up a second disk drive to your ST. The above information should be all you'll need.

I've used both a 5 1/4" 720K Teac disk drive and a 3 1/2" 720K Toshiba disk drive as drive 'B' on my new ST.

-MIKE MILLER





CREATING YOUR OWN PRINTER CABLE

by Don Garr

Have you ever wanted to buy an Atari 850 interface but when you added up the price for the interface and the cable, you needed to make it work, it was just too much. The printer cable for the 850 runs about $30.00 and adding that to the price of the interface has probably prevented more people from making the purchase than just me. Everytime I look at the magazine adds and see the 850 for $99.00 I think, wow, I sure would like to get it but the whole purchase would be more like $130.00.

Well now I have the answer for you...make your own cable. For less than $10.00 and these instructions you can construct your own cable. Go to Radio Shack and get two connectors, a parallel printer connector: (1 cat. no. 276-1534A) price $4.99 and a D-subminature MALE 15 pin connector (1 cat. no. 276-1527) price $2.49. And the last ingredient you need is a cable with at least 12 conductors.

Now, how to connect them:

DB-15/850	36 pin (Printer)	
1	1	data strobe
2	2	data 0
3	3	data 1
4	4	data 2
5	5	data 3
6	6	data 4
7	7	data 5
8	8	data 6
11	14	Grnd
12	32	fault

13..... 11 busy
15..... 9 data 7

Your Atari computer sends data out of the I/O (Input/Output) port in an arrangement called serial. Serial data is sent out 1 single bit at a time. Standard printers are set up to receive data in an arrangement called parallel. Parallel data is sent 8 bits at one time, hence all 8 bits are in parallel. The 850 interface receives the serial data from the computer saves the data until it has 8 bits and then sends the data out in a parallel arrangement. If you look at the signal cable above you'll see data 0 thru 7... totalling, yep you guessed it, 8 BITS. Funny how that works out, isn't it?

And now for you Atari ST owners here's a pin out chart for creating a printer cable for the ST. (Instead of a DB-15 you'll need to purchase a DB-25 (Radio Shack cat. no. 276-1547) price $1.49.

DB-25.....36 pin (Centronics)

1..... 1	2..... 2
3..... 3	4..... 4
5..... 5	6..... 6
7..... 7	8..... 8
9..... 9	10..... 10
11..... 11	12..... 12
13..... 13	20..... 1
21..... 19	22..... 20
23..... 21	24..... 22
25..... 23	26..... 24
27..... 25	31..... 16
32..... 15	

You know the thing about making your own cable is that you can save a bunch of money and make it any length you want. You should limit the length to under 150' but I don't think that should normally be a problem with us home computer buffs.

Well good luck, and happy computing (and printing).

MICHTRON CONTEST

The Michtron RT is having a contest! The contest is divided into two categories. The most uploads by an individual and the Best GFA Basic program. To reach the MichTron RT from any menu prompt just type move 490.

There will be 3 winners in each Category.

The Prizes to be Awarded are as follows:

Most Uploads
1st Prize = $500 worth of your choice of Michtron Software
2nd Prize = $300 worth of your choice of Michtron Software
3rd Prize = $150 worth of your choice of Michtron Software

Best GFA Program
1st Prize = $500 worth of your choice of Michtron Software
2nd Prize = $300 worth of your choice of Michtron Software
3rd Prize = $150 worth of your choice of Michtron Software

The rules of the contest are written below. Hope we see you there.

CONTEST RULES

The following are the rules of the Michtron RT Contest.

-Uploader's of all files submitted and accepted in the Michtron RT Software library between

November 30, 1987 and January 30,1988 will be considered for the most number of upload's.

-For a file to be counted as an upload it must have something to do with one of the Michtron products. In other words it must either have used one of Michtron products or be an example of their usage or an aid in their use.

-File's will not be accepted which are:

* Duplicates of existing programs in the Michtron Software libraries.

* Individual programs uploaded singly rather than ARC'ed. An example of this is where a program consist's of the main program, dat files and docs and the user upload's the main program, docs, and dat files seperately instead of arcing them together. The upload's will counted as one upload.

* Files must be at least 4k in length to count as an upload.

-Files submitted for the Best GFA program MUST include the source code.

-Employee's of Genie, Michtron, and the Sysop's of the MichTron RT are not eligible for the contest.

-The decision to reject or accept a file submitted rest's in the hands of the sysops and their decision is final!

-The prize for the best GFA BASIC program will be awarded for the best GFA Basic program uploaded by it's AUTHOR during the contest. Previous submissions to the MichTron RT do not count. <sorry>

REMEMBER ALL UPLOADS DURING THE EVENING AND ON ALL DAY ON WEEKENDS ARE FREE !

Good Luck to all of you. Programs previously uploaded elsewhere are eligible for the contest as long as they are GFA BASIC programs. Entries do not become the property of MichTron but they will be posted in the Michtron RT Library.

The files can be uploaded elsewhere and shareware programs are eligible. As for the copyright the author may keep it but the programs must be PD or shareware.

The whole purpose of the contest is to try to get some really good GFA PD programs.

Remember to get to the MichTron RT just type move 490 at any prompt!

Heres a bit of information that might be just what you are looking for.

SPECTRUM 512
Picture File Format

There're two kinds of Spectrum files: uncompressed (.SPU) and compressed (.SPC).

The .SPU file is always 51104 bytes long and consists of two parts: first the bit map (32000 bytes) and then the color map (19104 bytes). Because SPECTRUM 512 cannot display the topmost raster line, you have 199 lines instead of 200. For that reason, the top line in the bit map (the first 160 bytes of the file) contains no useful information and you should simply ignore it (SPECTRUM 512 fills it with zeros). Otherwise the bit map has the usual meaning -- low res, 4 planes, 160

bytes per raster line, giving each pixel a certain color number from 0 to 15. When you want to determine the color of any particular pixel in the .SPU file, you should first find it's color number (using Get Pixel $A002 rom A-line, for example; or your own routine).

To find the actual color of the pixel, look at the color map portion of the file. It consists of 199 blocks, one 96-byte block per raster line (no dummy top line here!). Each block contains 48 word color values in the usual ST format (00000rrr0ggg0bbb, r=red, g=green, b=blue). You will find the block you need for your particular pixel at the address (Y-1)*96 from the start of the color map, where Y is the Y coordinate of your pixel, 1<=Y<=199.

Finding which of the 48 colors in the block is the color of your pixel is a little trickier. To do that you'll need the color number that you found from the bit map and the X coordinate of your pixel. First, multiply the color number by 10. If the color number is even, add 1 to the result; if it's odd, subtract 5. Let's call the resulting number X1. Now, if X is less then X1, leave the color number as it is; if X is more or equal X1 but less then X1+160, add 16 to the color number; and if X is more or equal X1+160, then add 32 to the color number. This adjusted color number (it could be anything from 0 to 47) is the solution to our problem! It shows which of the 48 color values in the block corresponds to your particular pixel.

An example:
X=139 and the color number is 3.
Multiply by 10: 3*10=30.
Subtract 5 (because 3 is odd):
X1=30-5=25.
Okay, 139 is more than 25, but less than 185 (25+160). So, we add 16 to the color number and the result is 19. That pixel's color will be found in the word number 19 of the block (word count starts at 0).

.SPC files consist of 3 parts: 12-byte header, compressed bit map and compressed color map. Here's the header layout:

-word- $5350 ("SP")
-word- 0 for future enhancements
<>0 means there're additional records in the file, following the compressed color map
-long- length of the bit map
-long- length of the color map

Bit map compression is a slightly modified RLE. Each record consists of a header byte followed by one or more data bytes. A positive header (0<=n<=127) means copy the next n+1 bytes literally, a negative (-128<=n<=-1) - copy the next byte -n+2 times (minimum 3; the encoder does not compress if there're just 2 equal bytes in a row). First goes bit plane #0, all scan lines from 1 (not 0!) to 199, without breaks at the ends of scan lines (only at the end of the last line), then bit planes #1,2 and 3. Terminate decompression when the number of bytes extracted reaches 31840 (4 bit planes x 199 lines x 40 bytes per line). The length of the compressed bit map is always even, so there might be one filler byte at the end of it. If you convertan .SPC file to .SPU to display it on the 512-color screen, fill scan line #0 with zeros (first 160 bytes of the .SPU file) to give it the same color as the top screen margin.

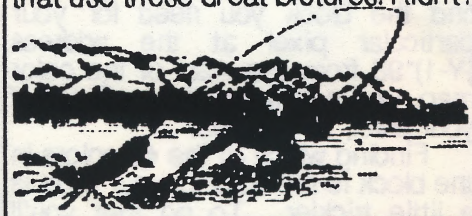
In the color map each short 16-word block is compressed separately (there're 3 of them in each scan line, 597 altogether). The compressed record for each short block starts with the bit vector (1 word) indicating which of the 16 color slots are used, followed by the color

values themselves (each is a word). For instance, $000A,$0707,$0777 should be expanded into 0,$0707,0,$0777, twelve zeros ($000A =%0000000000001010, meaning only colors #1 and 3 are used). Unused color slots should always be filled with zeros. Color #15 is never used in a finished Spectrum picture, so bit #15 of the bit vector must always be 0. Color #0 is always used (as a background) and it's always black. Since it makes no sense to have this extra 0 in every compressed record, bit #0 of the bit vector is always cleared, indicating to the decoder to fill slot #0 with 0. The number of color values following the bit vector in the compressed record is equal to the number of 1's in the bit vector.

If the above compression rules are observed the length of the compressed bit map will never be greater than 32092 bytes, and the length of the compressed color map will never be greater than 17910 bytes. Spectrum rejects SPC files that exceed these size limits.

Editor Note:

Now that that's all cleared up and everyone knows how to use the Spectrum 512 picture format. We as a club sould be able to use this bit of info in our soon to be created SIGs(Special Interest Groups) and come up with some great programs that use these great pictures. Right?



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Editors Last MEMO

And so as the sun sets on the majestic mountain range in the West so ends another year of the L.A.C.E. editors duties. I have enjoyed bringing you each and every one of these newsletters and wish the new editor a easy and speedy adjustment to this post and all of it's rewards.

This year has seen an interesting and varied assortment of happenings. Some of which as a club we could have done without. But even with all the hard times we have survived what this ol' world has thrown at us. Right?.

Well don't give up the ship as of yet, this next year promises to be just as trying for all concerned. With the merger of the IMACE and the fall of the HUG group, which leaves some lost Atari users roaming the streets, we as a club have an even harder responsibility in trying to make each meeting enjoyable for all the old members and new arrivials. It has been proposed that we regenerate the interest in Special Interest Groups(SIGs) and make them available to all users interested. We hope some of you, the members, will make yourself available to assist with or become apart of the groups and make them work. The SIGs have the ability to help all users in understanding their computers and helping spread the knowledge from one to all.

As this is my last newsletter I would like to THANK each and every one you for giving me the support needed to get the newsletter out each month. It has been a real experience putting these articles together for you. There has been some tough times in getting it out with the loss of our dearly missed Free printing, but we have managed to keep cranking them out none the less. I have enjoyed making them and seeing the final product in the hands of the members at the meeting.

Thank you all

Don

L.A.C.E.

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NEXT MEETING: Feb. 3, 1988

Held At The Clearfield Davis County Library at 7:00pm